REPLACEMENT DRAWING

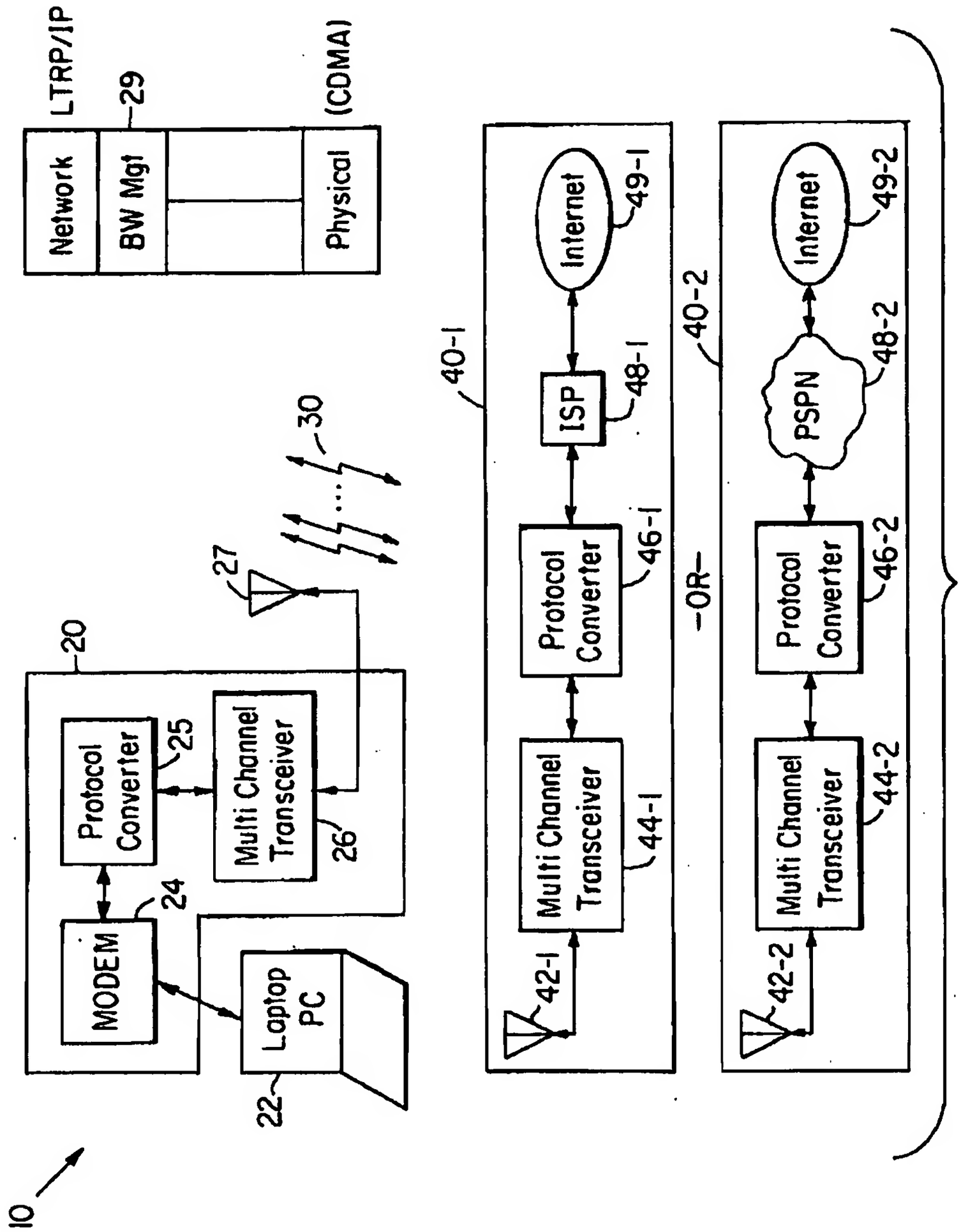


FIG. 1

REPLACEMENT DRAWING

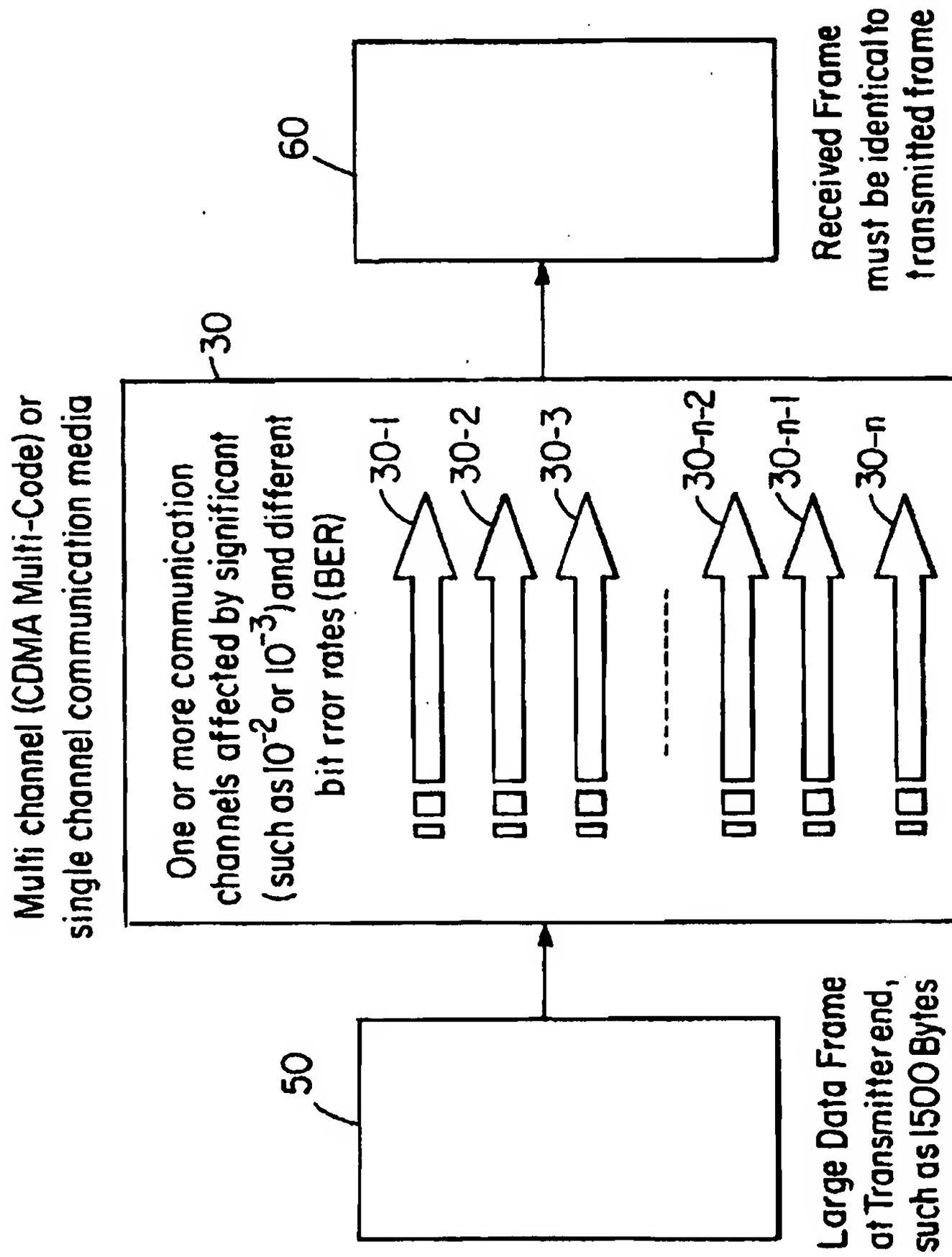


FIG. 2

REPLACEMENT DRAWING

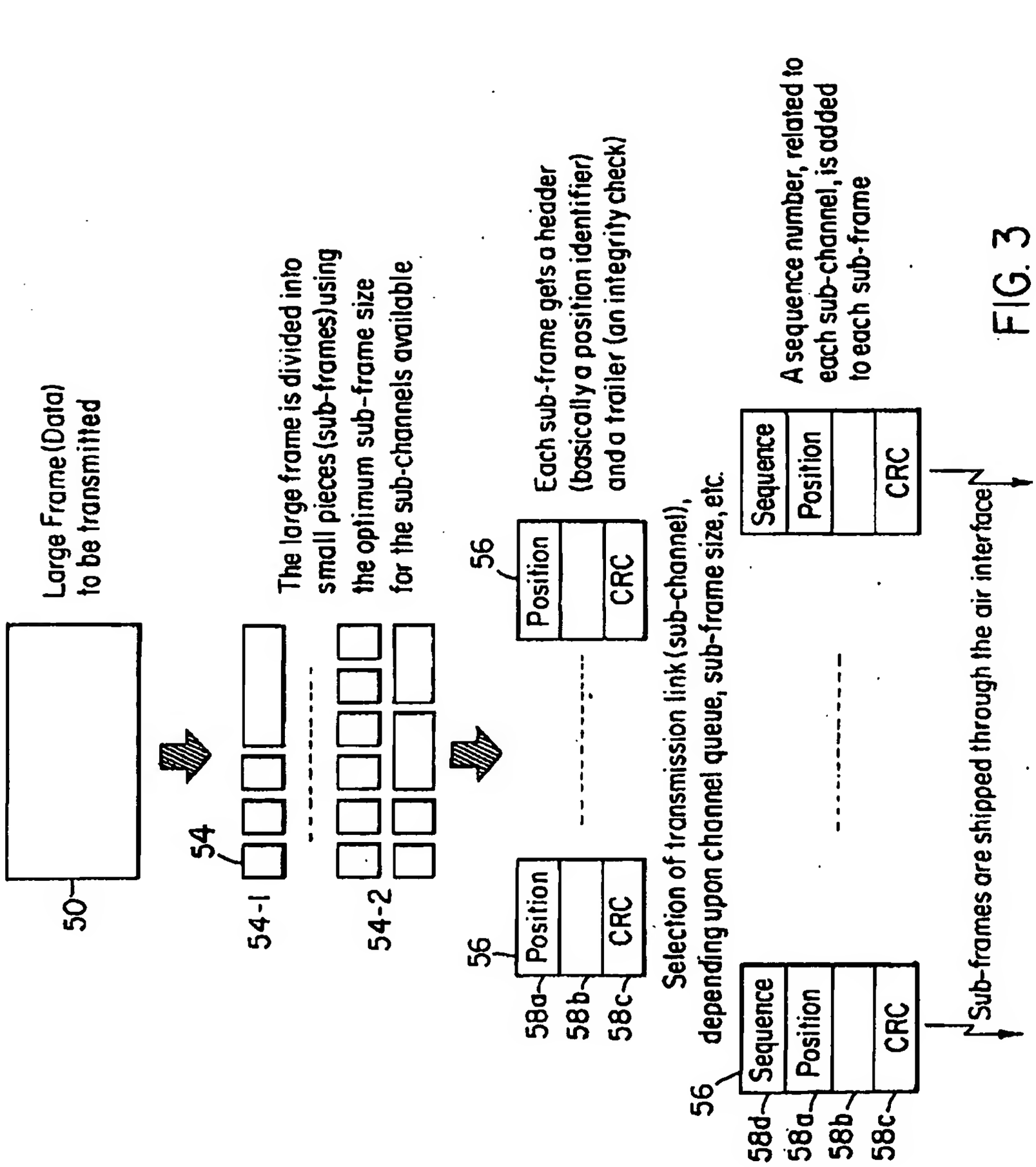


FIG. 3

REPLACEMENT DRAWING

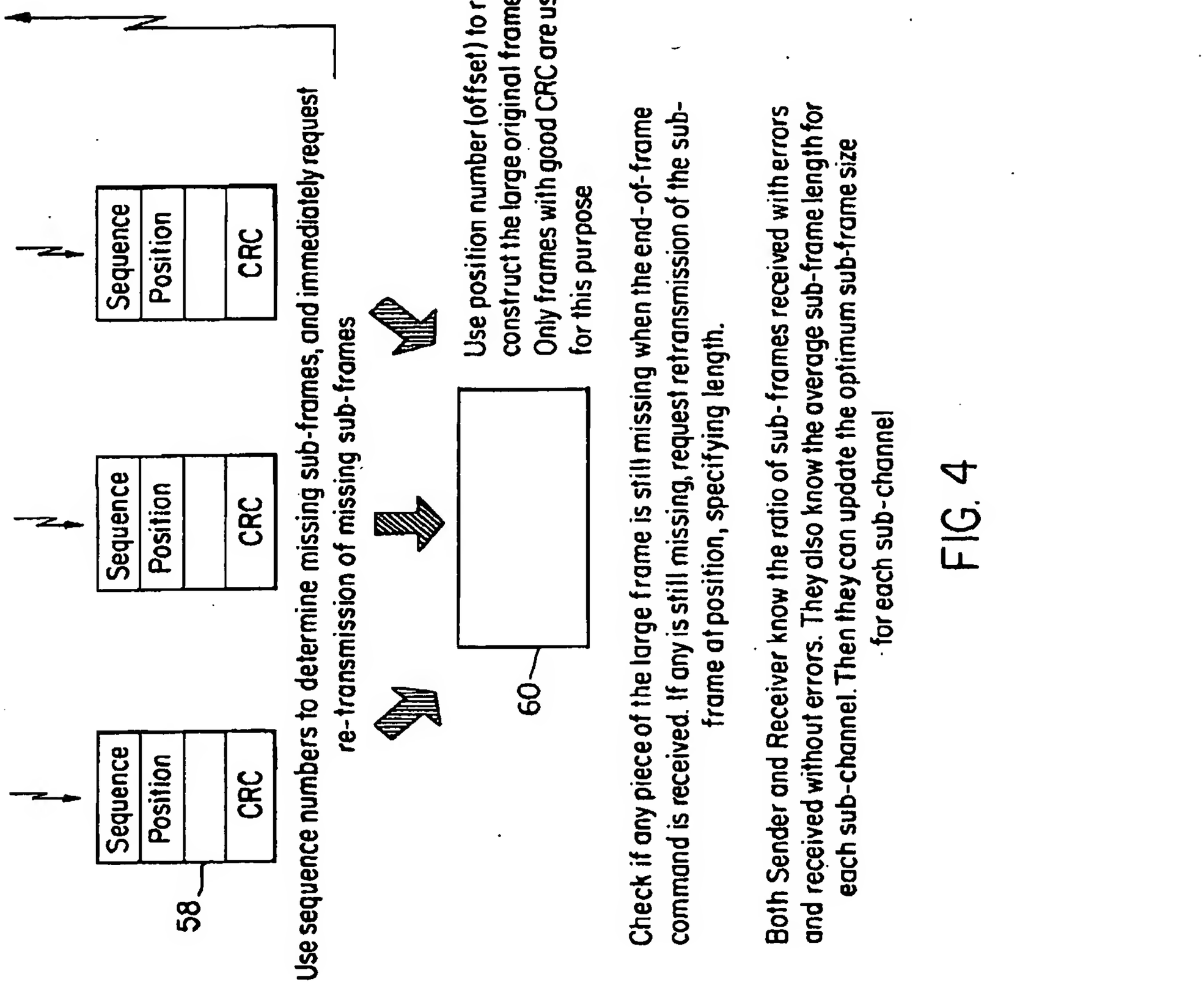


FIG. 4

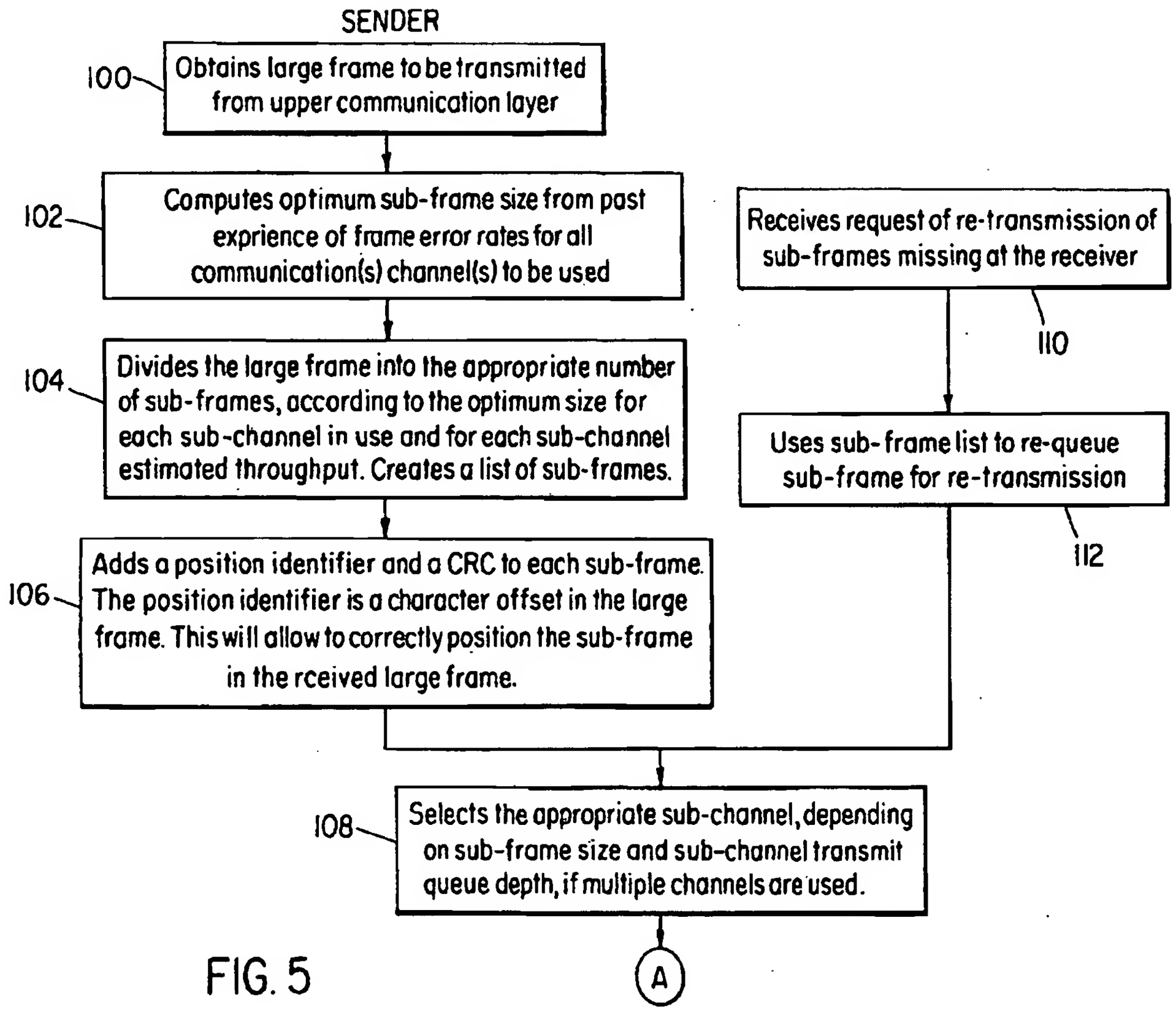


FIG. 5

REPLACEMENT DRAWING

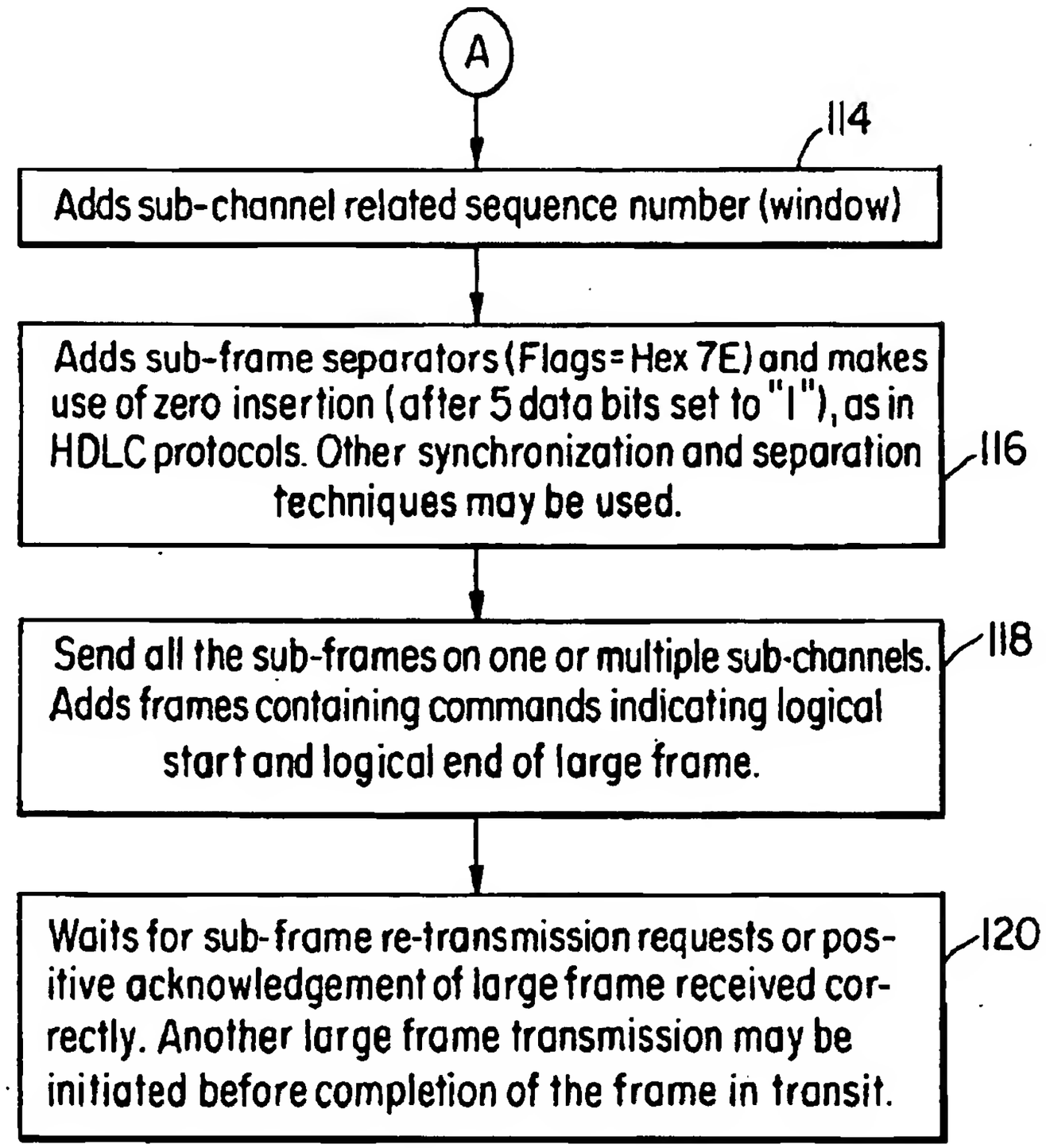
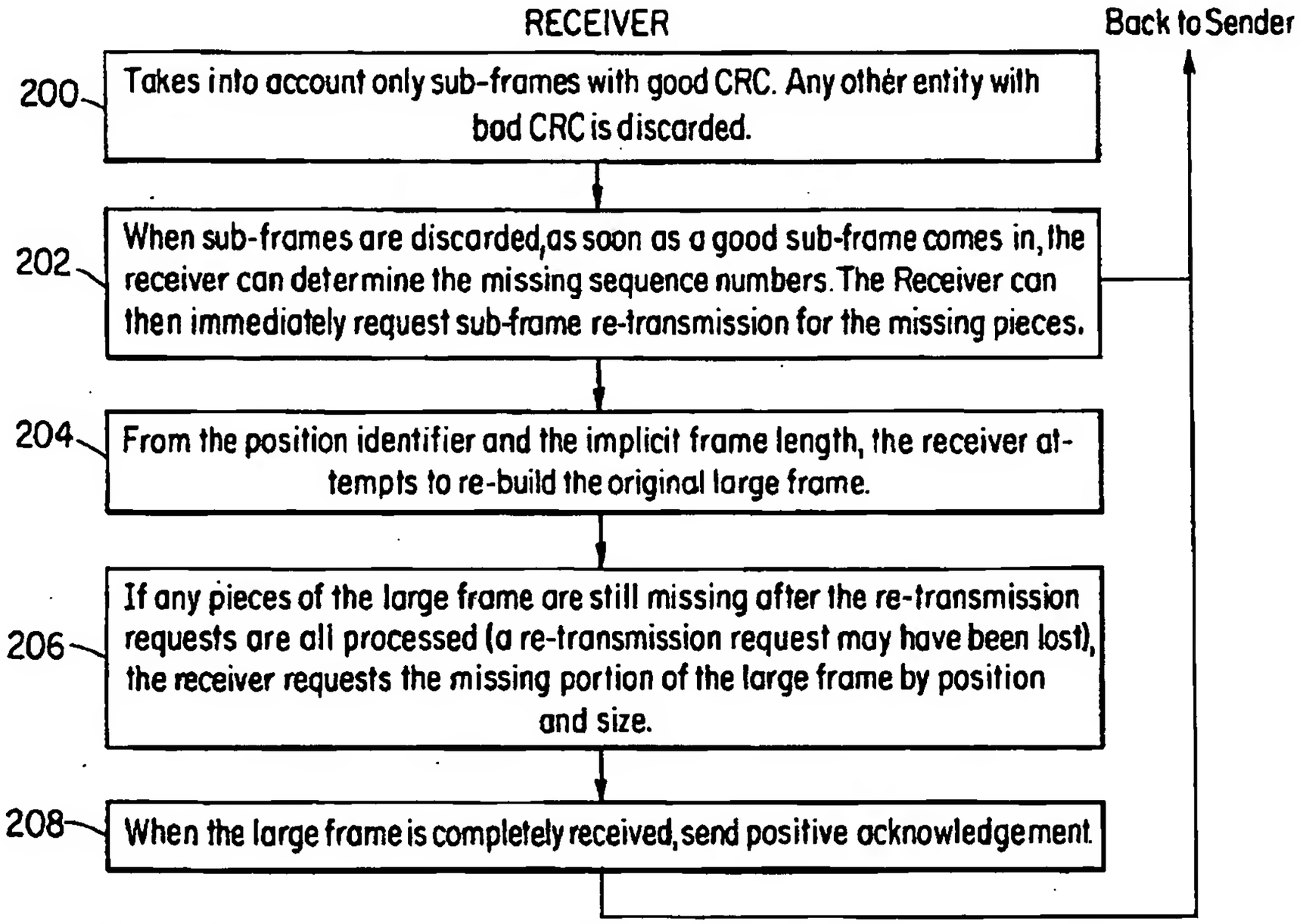


FIG. 6

REPLACEMENT DRAWING



Note that the transission sub-layer described here does not have to ensure perfect integrity. The large frame includes it's own CRC and other higher layer protocol elements to ensure data integrity. An error in the sub-layer described here is equivalent to bit error perceived at the higher layer. The sub-layer only strives to improve BER, not generate absolute data integrity.

FIG. 7

REPLACEMENT DRAWING

Sub-Frame Structure

Field	Proposed Number of Bits
Data/Command Indicator	1
Large Frame sequence number (Window of 2)	1
Character offset of sub-frame into large frame	11
Sub-Channel sequence number (Window of 7)	3
Data	0 to 2048
CRC	12
Shared Flag (Hex 7E)	8

This sub-frame structure is suitable for sub-channel utilization (Multi-link) use on media with high Bit Error Rates (BER)

FIG. 8

REPLACEMENT DRAWING

One bit error every n bits on "raw" sub-channels		# of Sub-Channels with same characteristics	Effective sub-channel transfer rate	Cumulative Sub-Channel transfer rates
50	High	2	2000	4000
500	Med	5	6000	30000
5000	Low	13	8000	104000
TOTAL		20		138000

FIG. 9

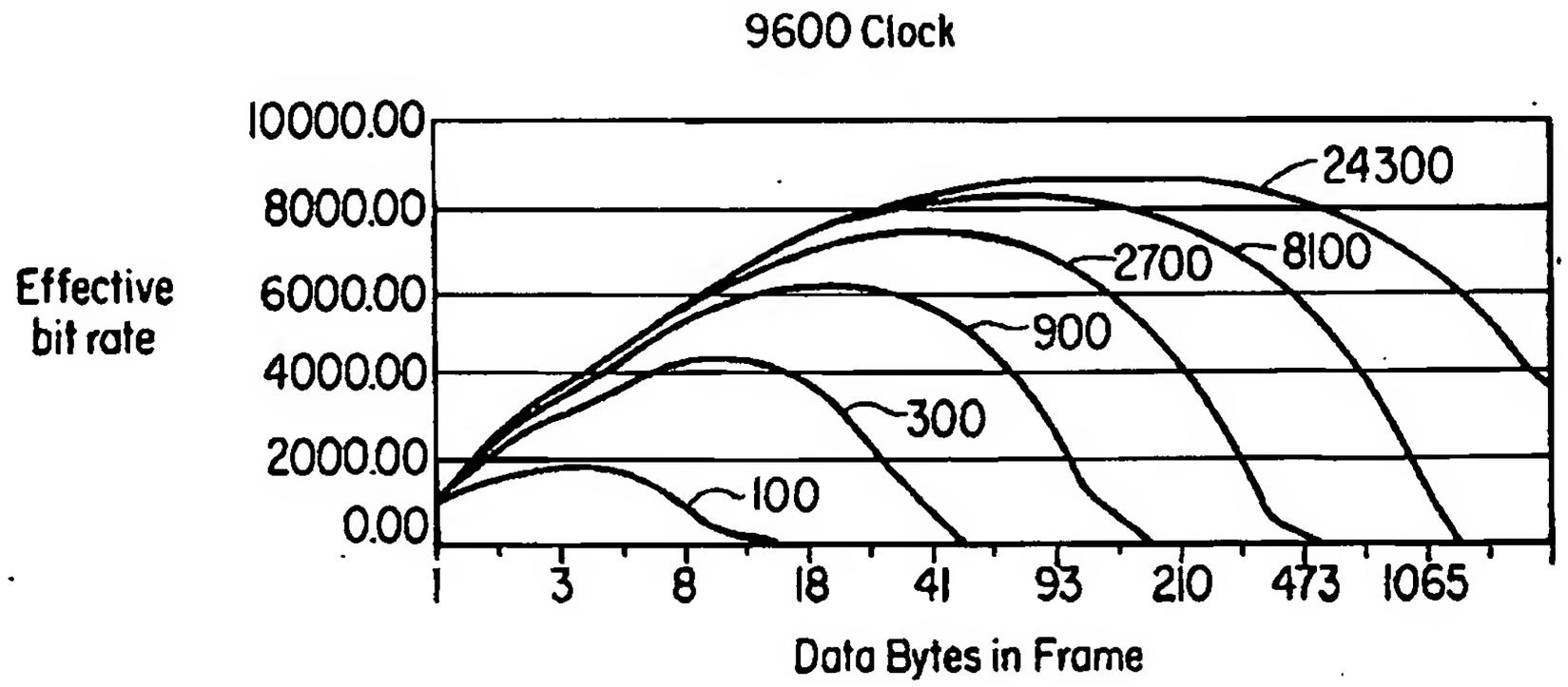


FIG. 10

REPLACEMENT DRAWING

REPLACEMENT DRAWING

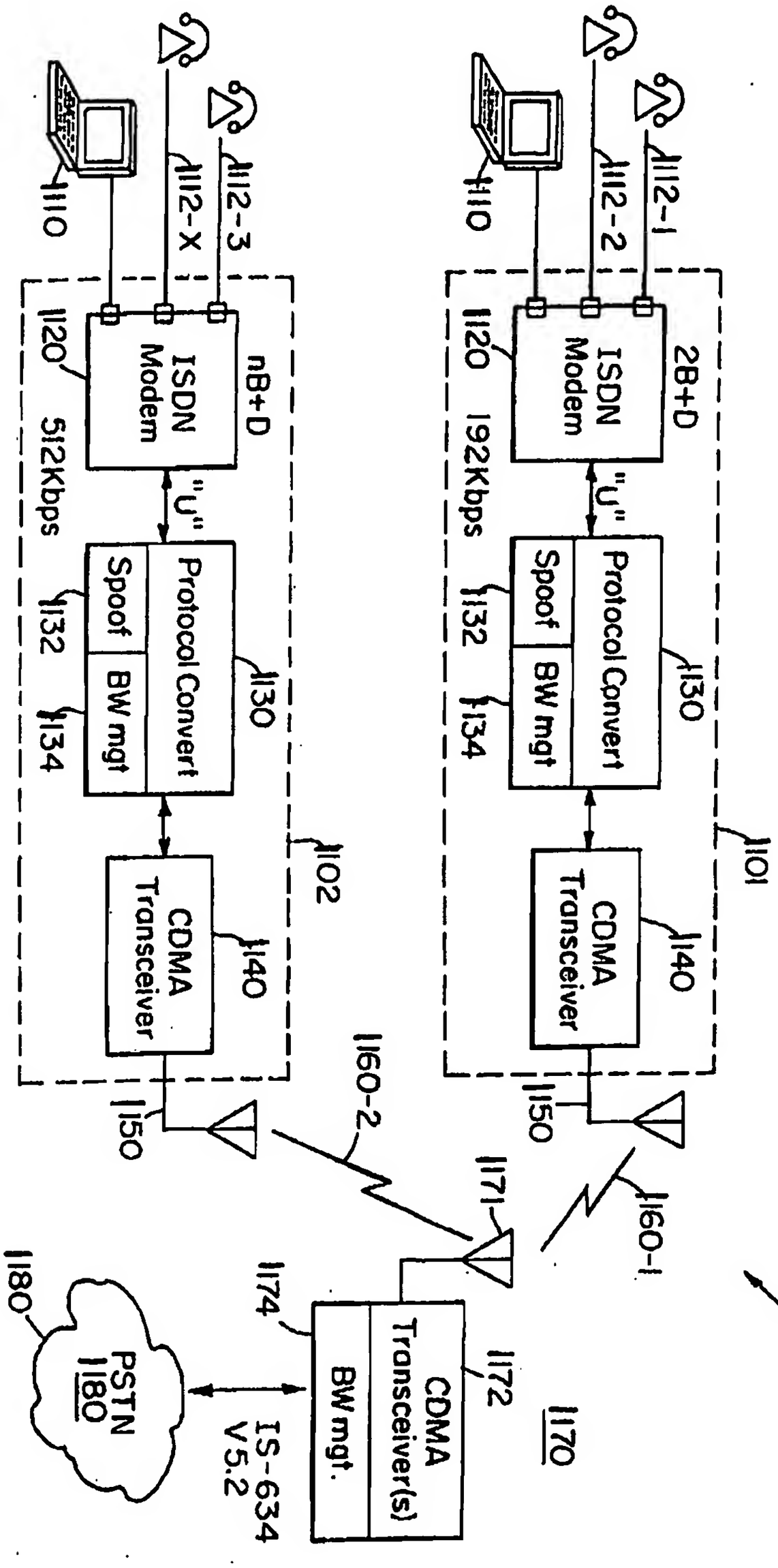


FIG. 11

REPLACEMENT DRAWING

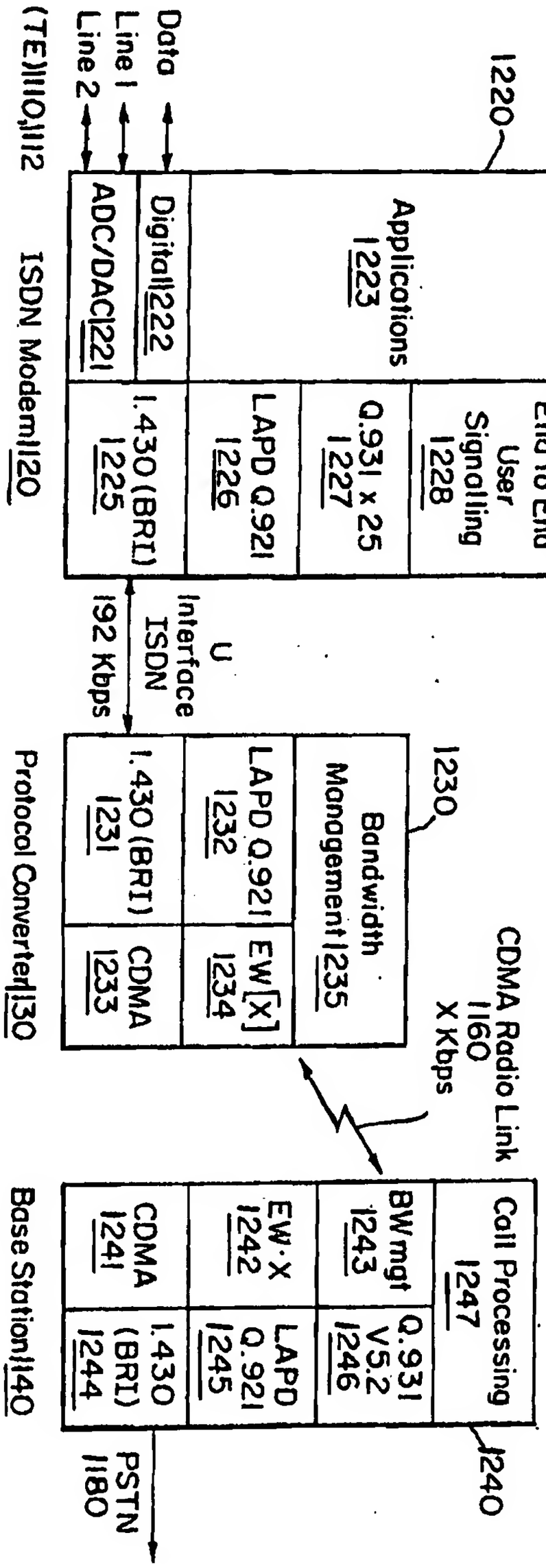


FIG.12

REPLACEMENT DRAWING

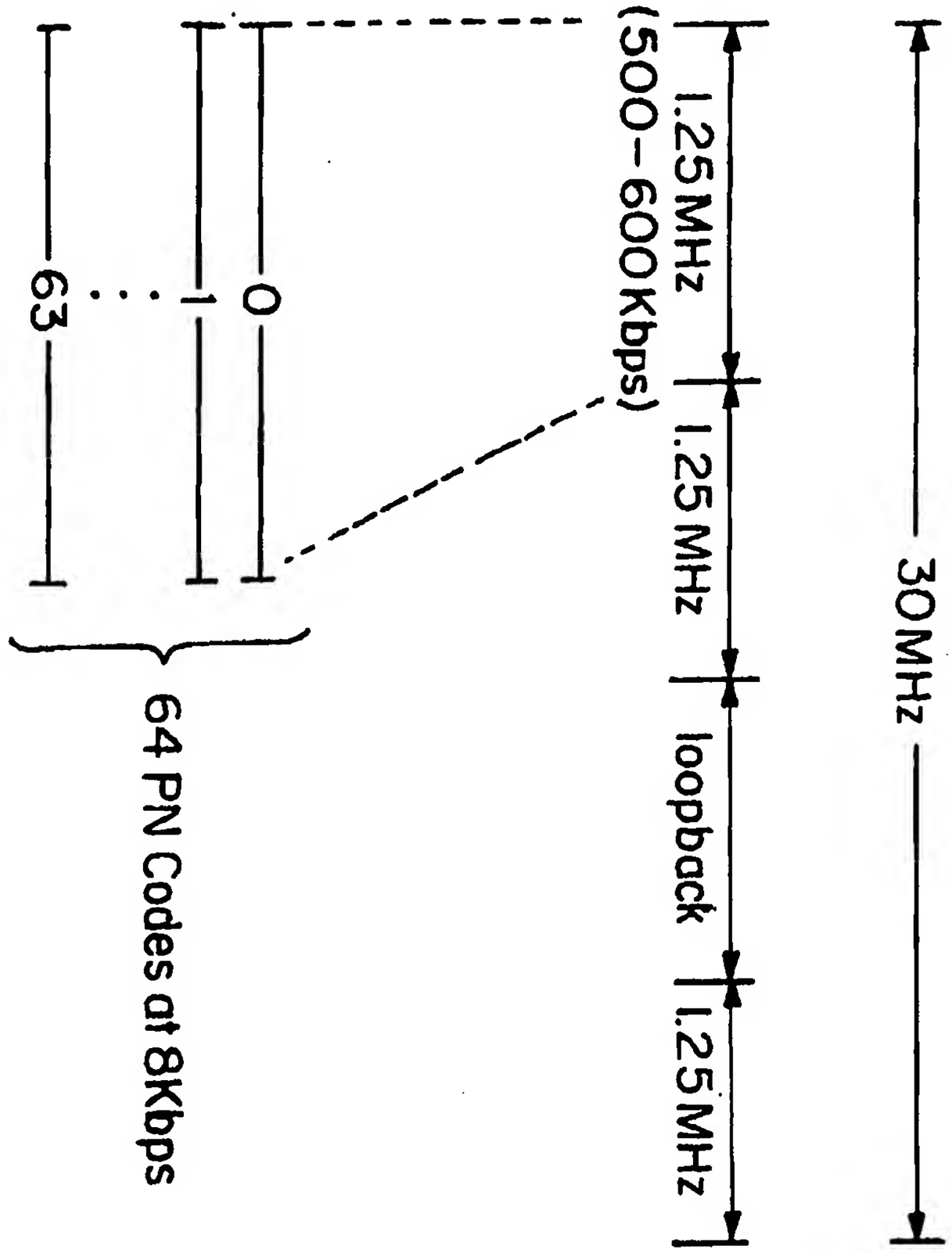
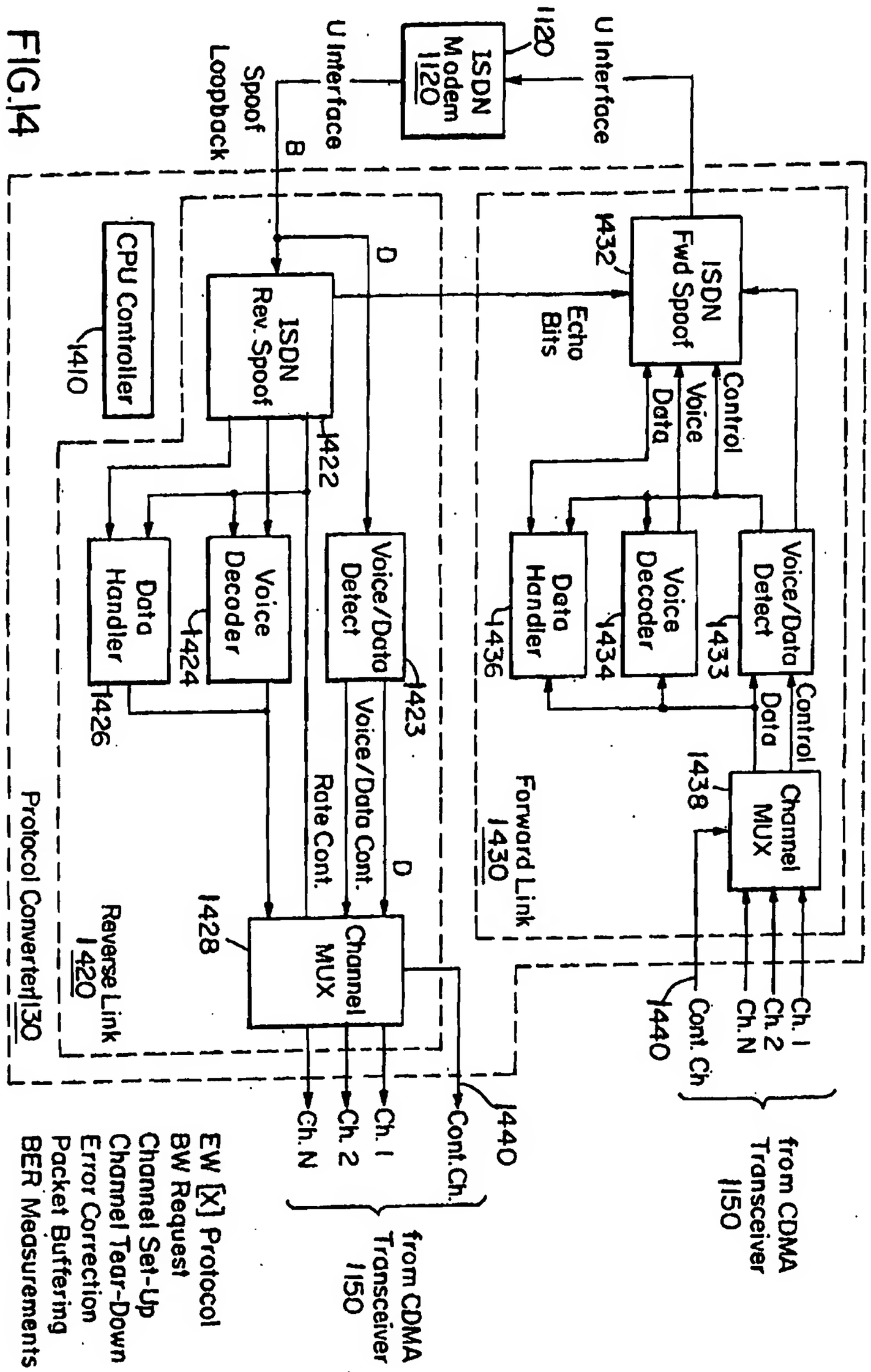


FIG.13

REPLACEMENT DRAWING

FIG.14



REPLACEMENT DRAWING

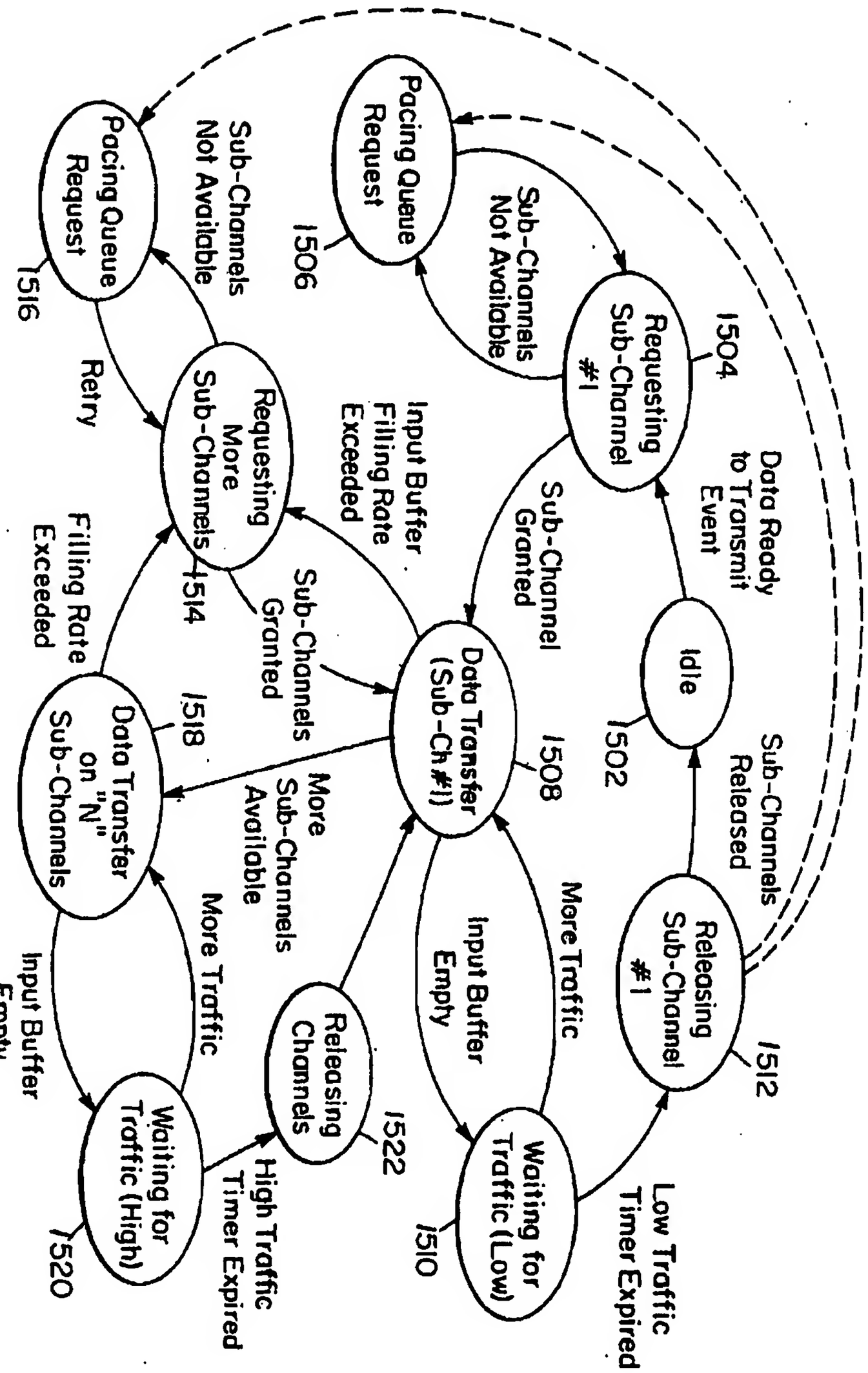


FIG.15

REPLACEMENT DRAWING

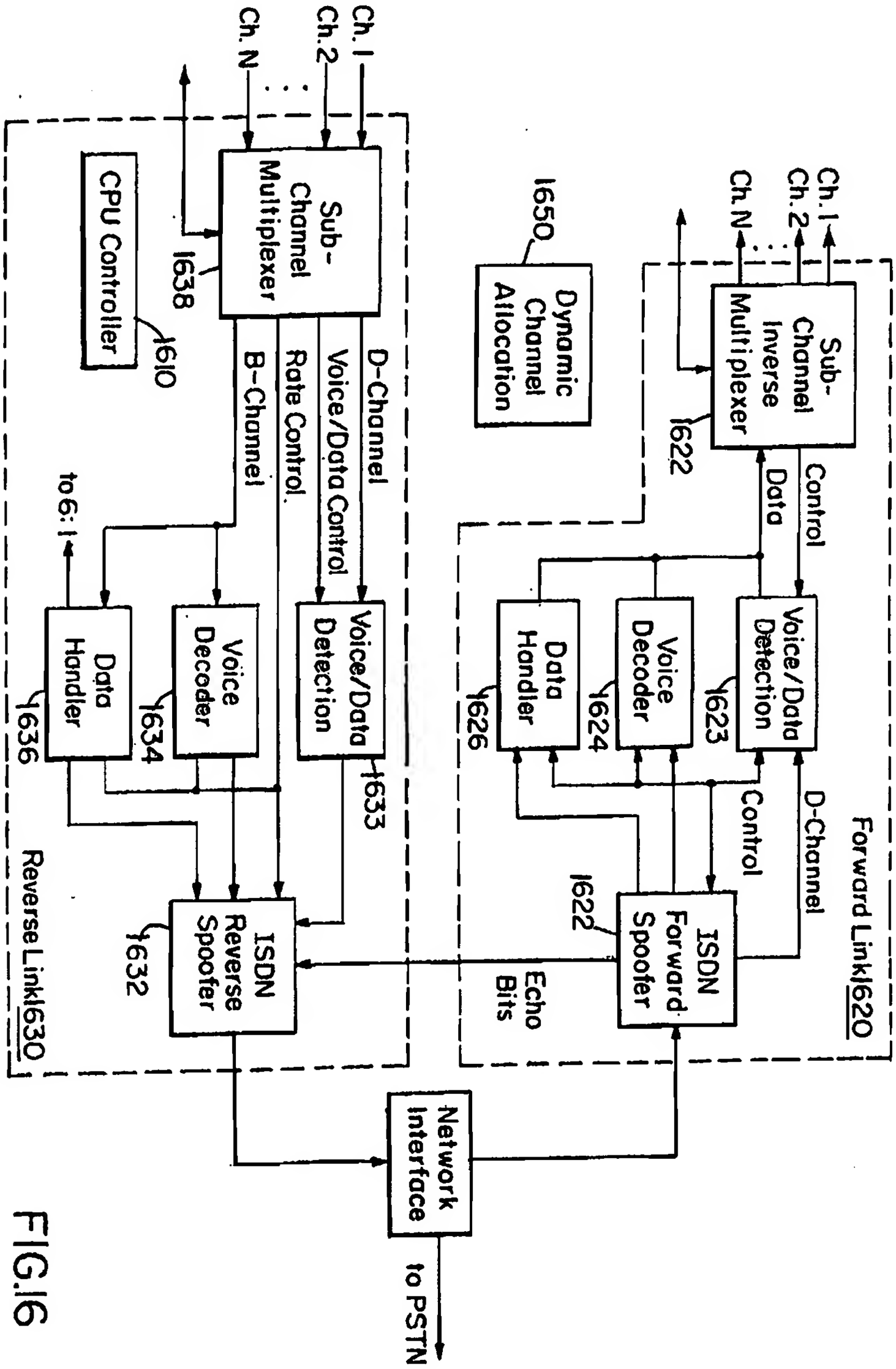


FIG.16

MAIN:
- DO Always
  - Process Port Request
  - Process Bandwidth Release
  - Process Bandwidth Requests
  - Locate and tear down unused sub-channels
- ENDDO

} 710

PORT REQUEST:
- Make reservation in least utilized sub-band
  - Reservation decision based on % of available Sub-Channels to assign (Based on parallel user BW vs. throughput efficiency)
- IF reservation was made
  - Send frequency and code assignment
  - Update allocations
- ELSE
  - Add port request to port queue
  - Calculate expected wait time
  - Send wait message to user
- ENDIF

} 720

BANDWIDTH RELEASE:
- Notify channel-bonding function
- Return frequency and code to available pool
- Update radio record

} 730

BANDWIDTH REQUEST:
- Select highest priority with lowest bandwidth utilization, including need-allocation gap
- Check other sub-bands for greatest available sub channels (Switch sub-bands if difference in sub-band space exceeds payback threshold)
- Assign sub channels based on need, priority, availability
- Notify channel bonding function
- Update radio record

} 740

FIG. 17

REPLACEMENT DRAWING

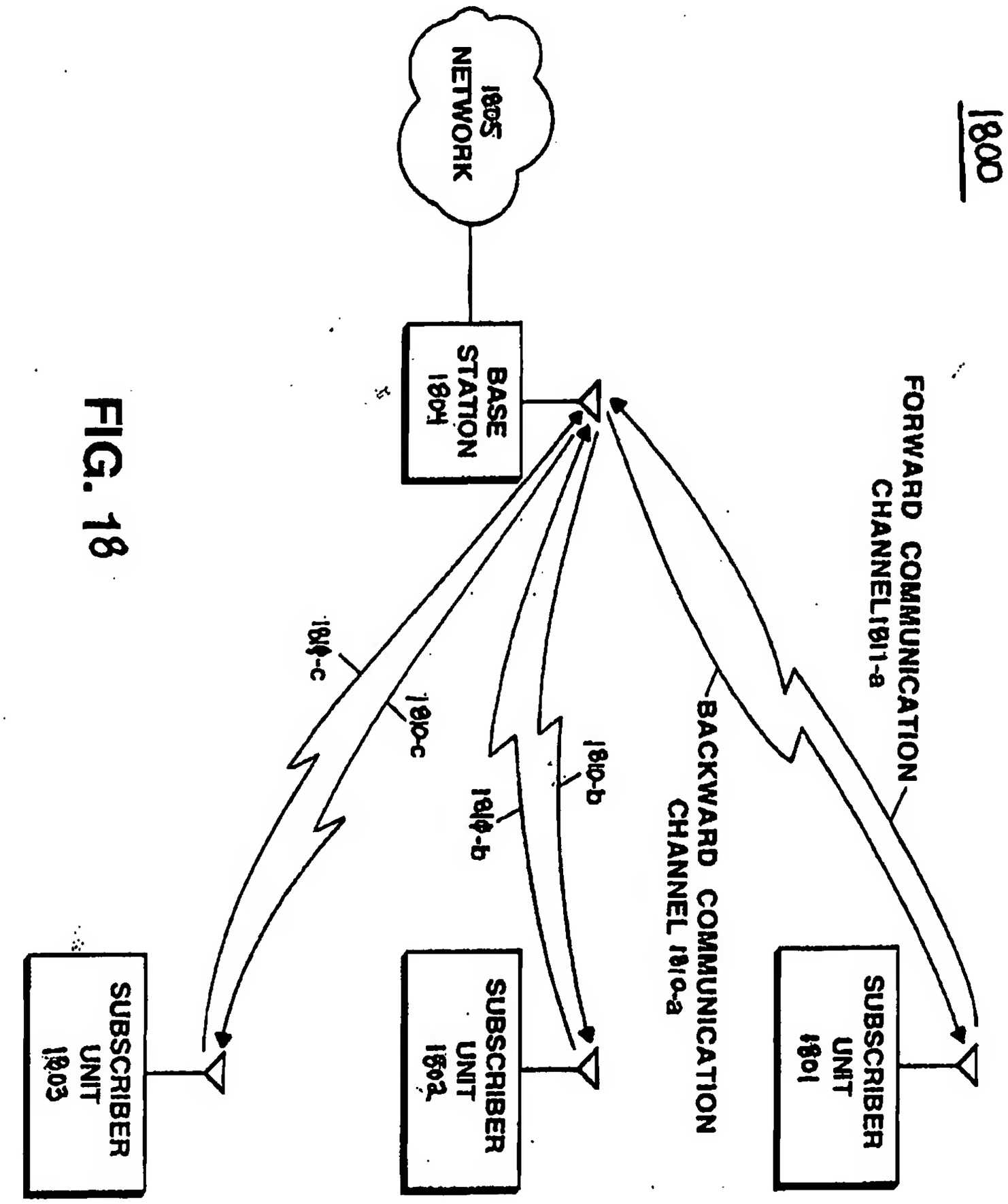


FIG. 18

REPLACEMENT DRAWING

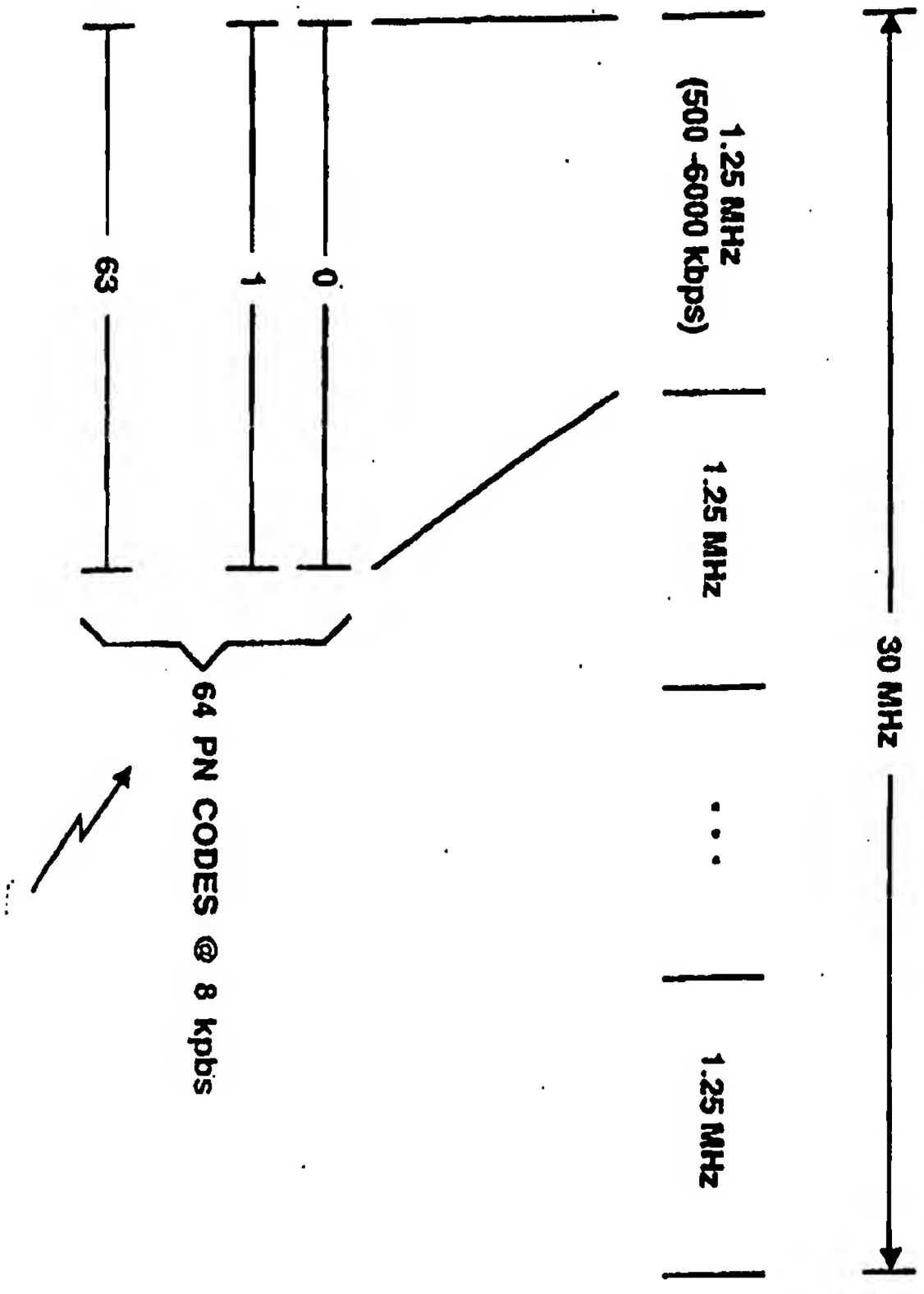


FIG. 10

REPLACEMENT DRAWING

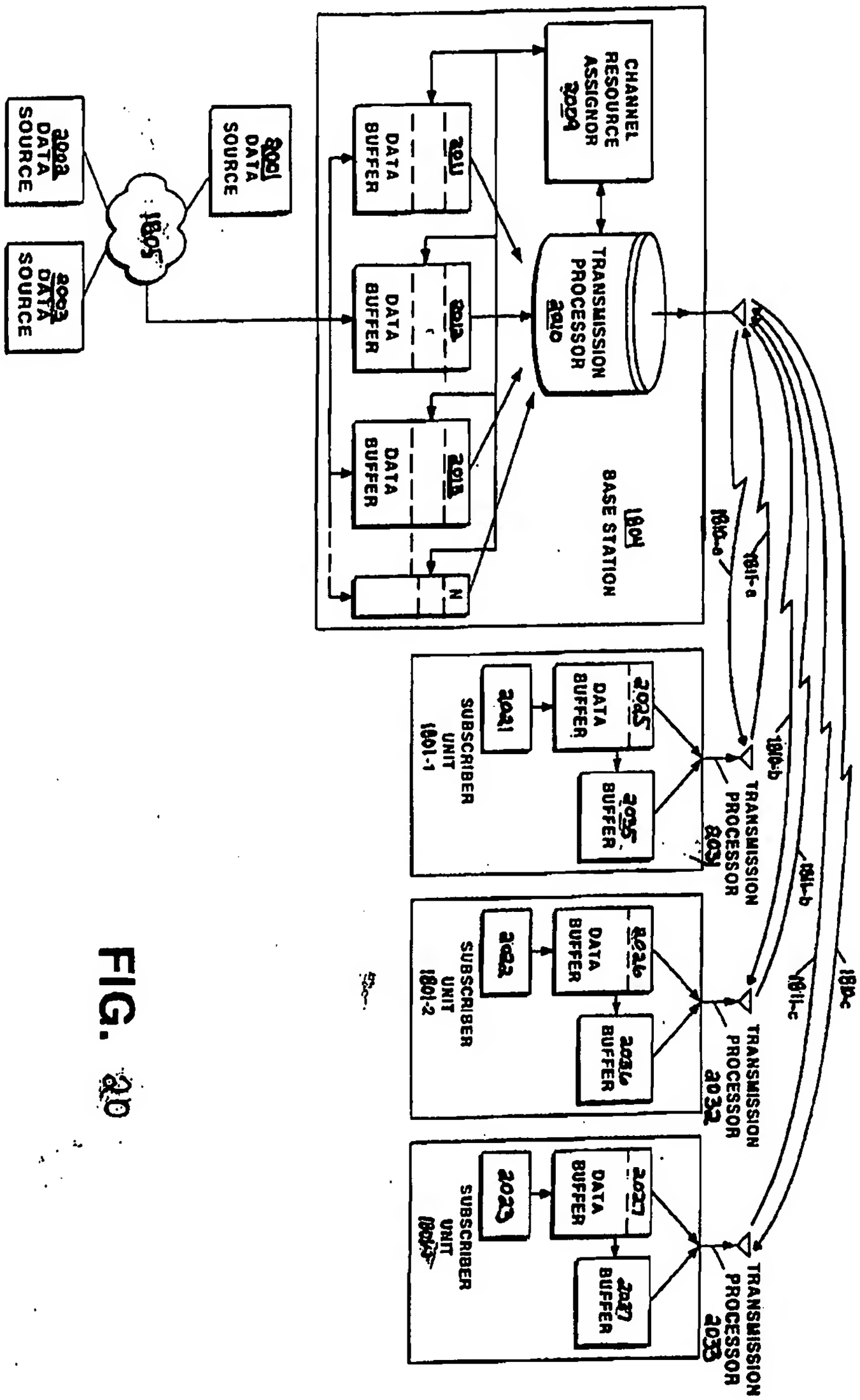


FIG. 20

REPLACEMENT DRAWING

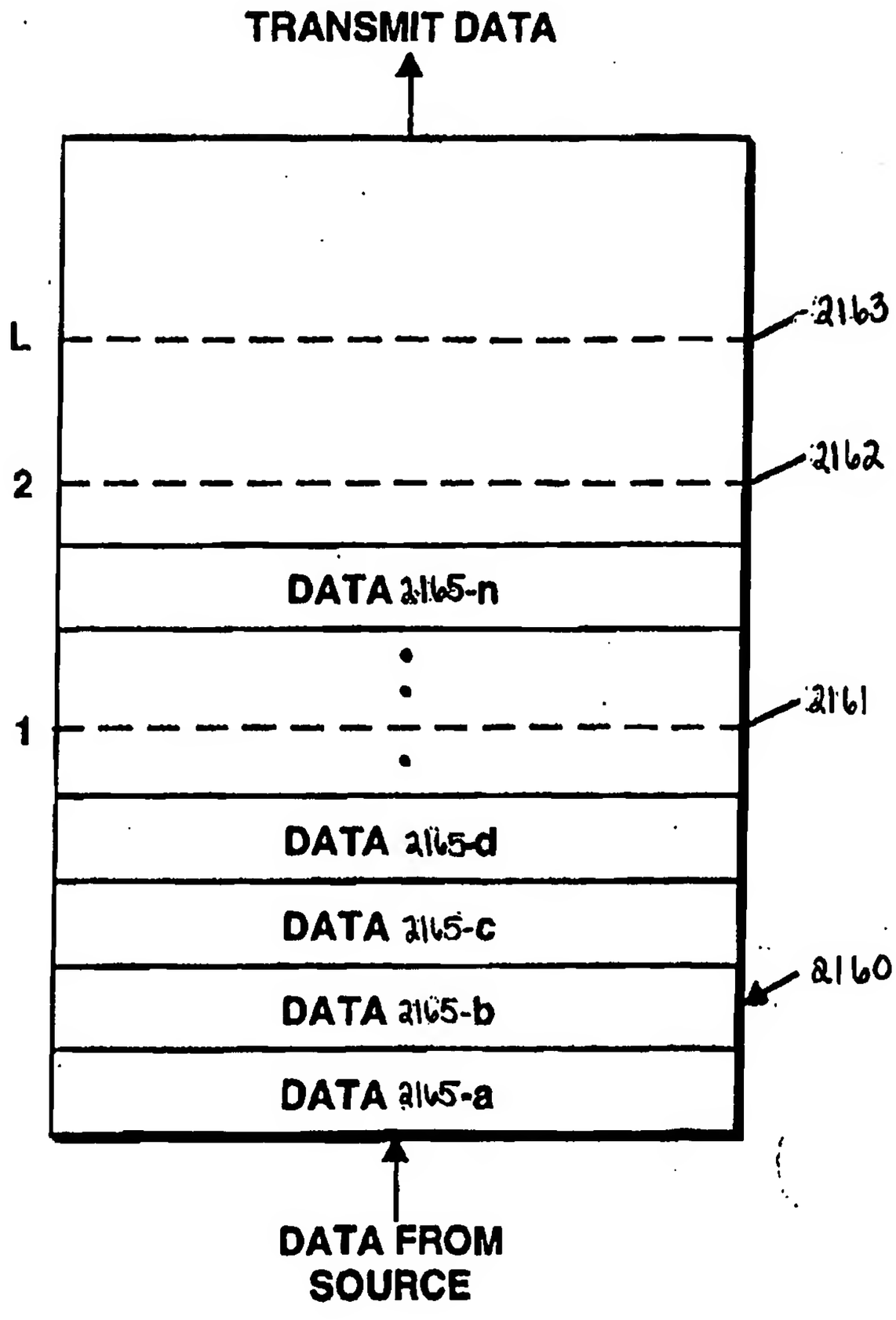


FIG. 21

REPLACEMENT DRAWING

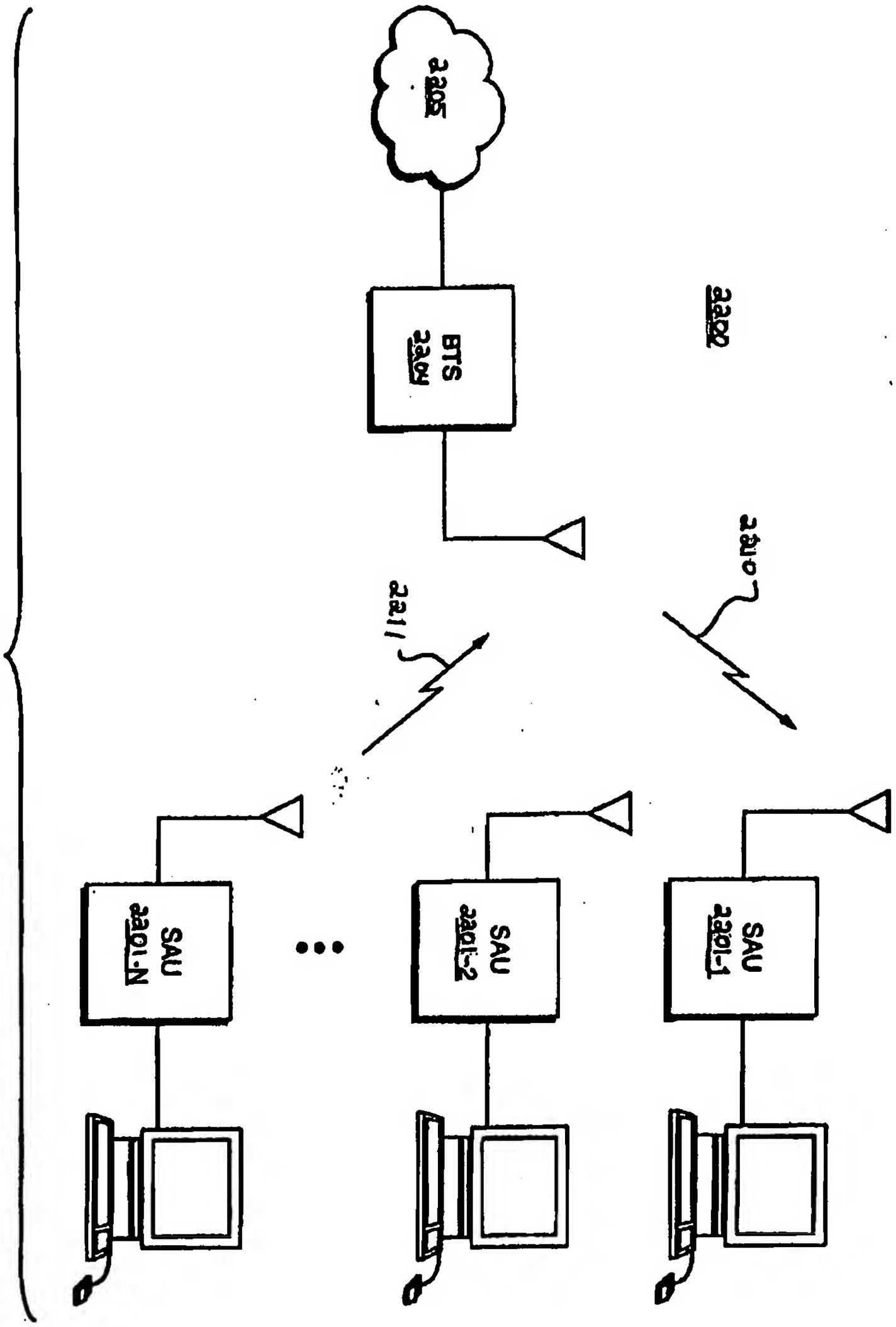


FIG. 22

REPLACEMENT DRAWING

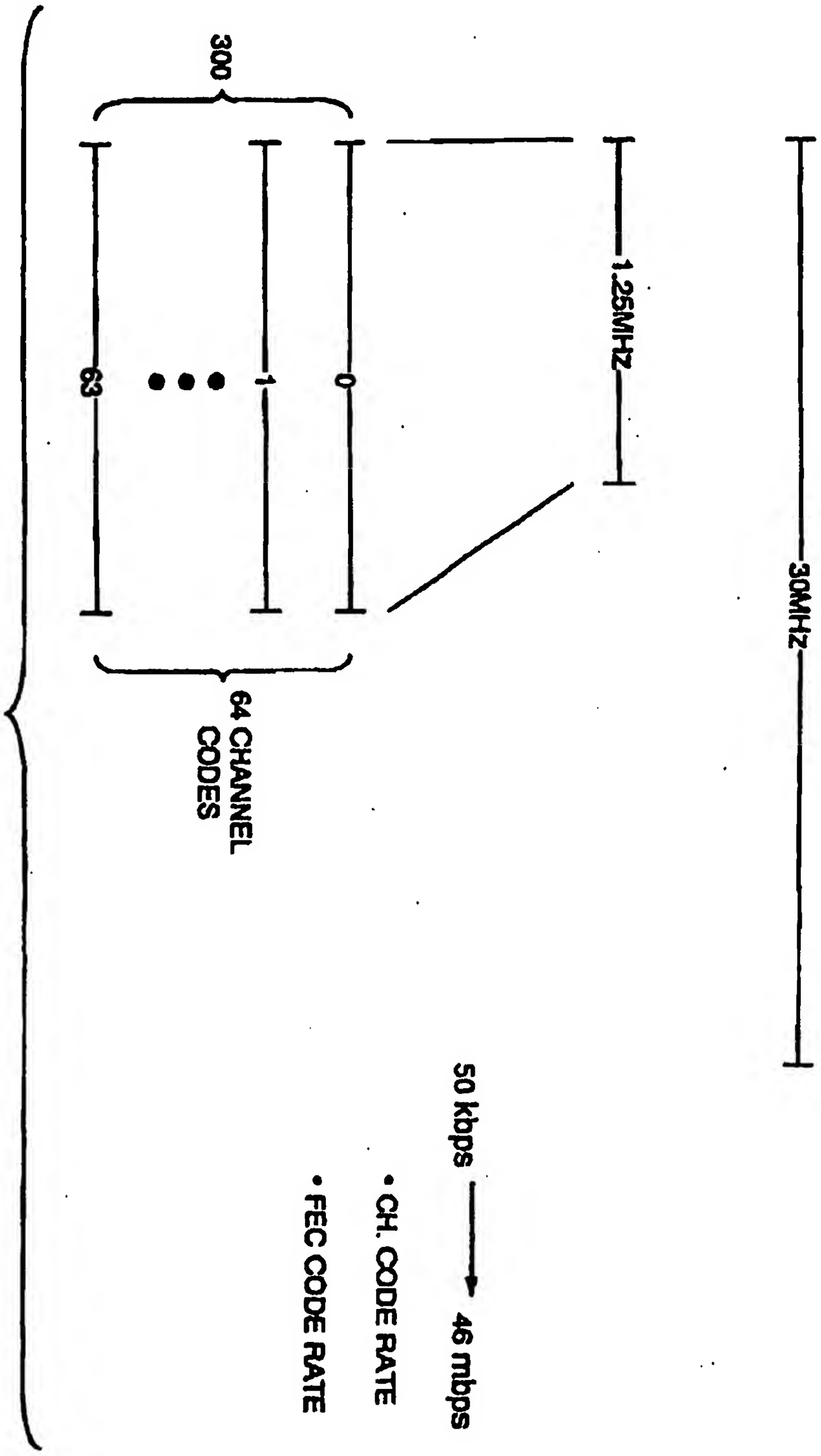


FIG. 23

REPLACEMENT DRAWING

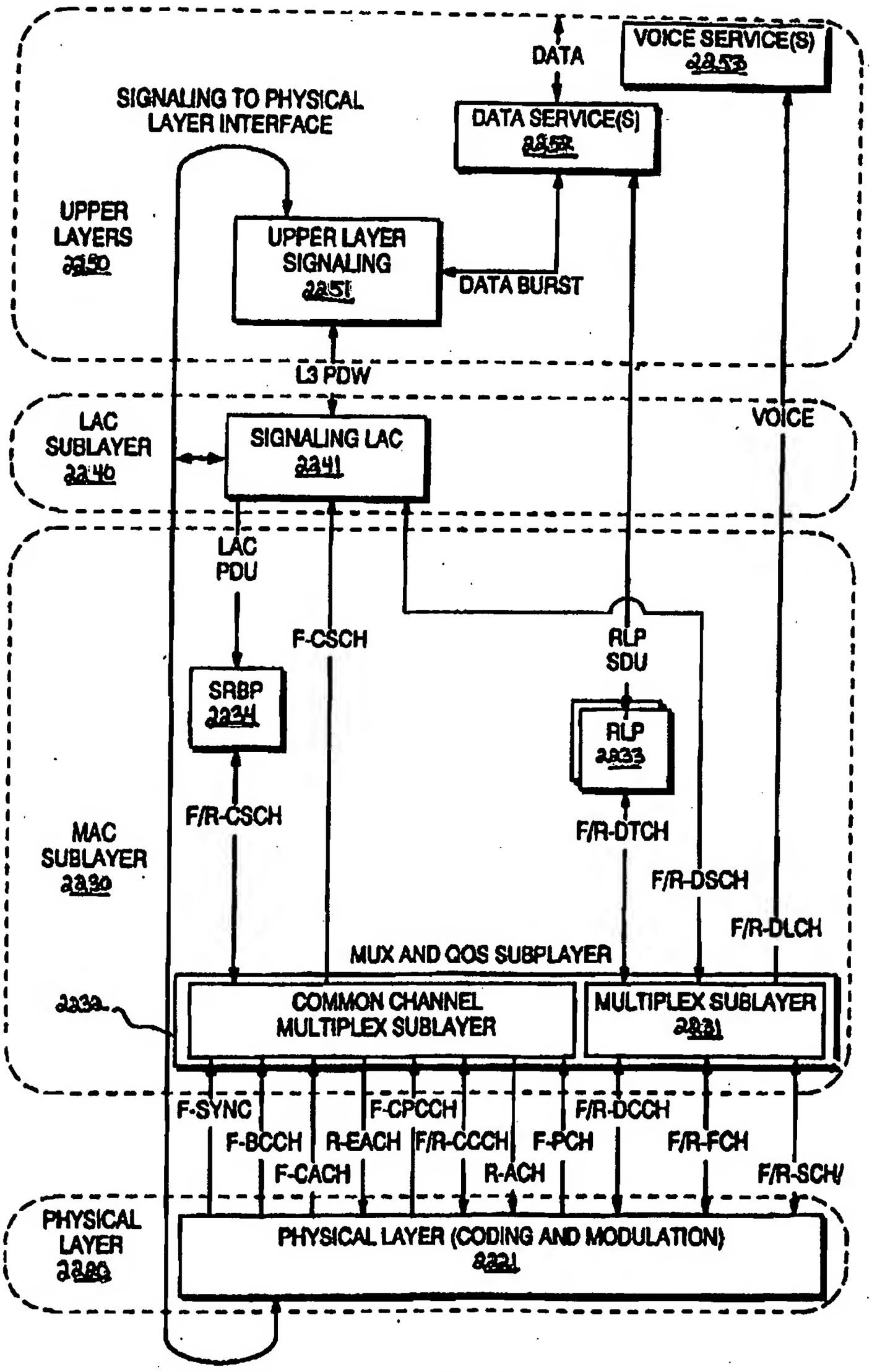


FIG. 2H

REPLACEMENT DRAWING

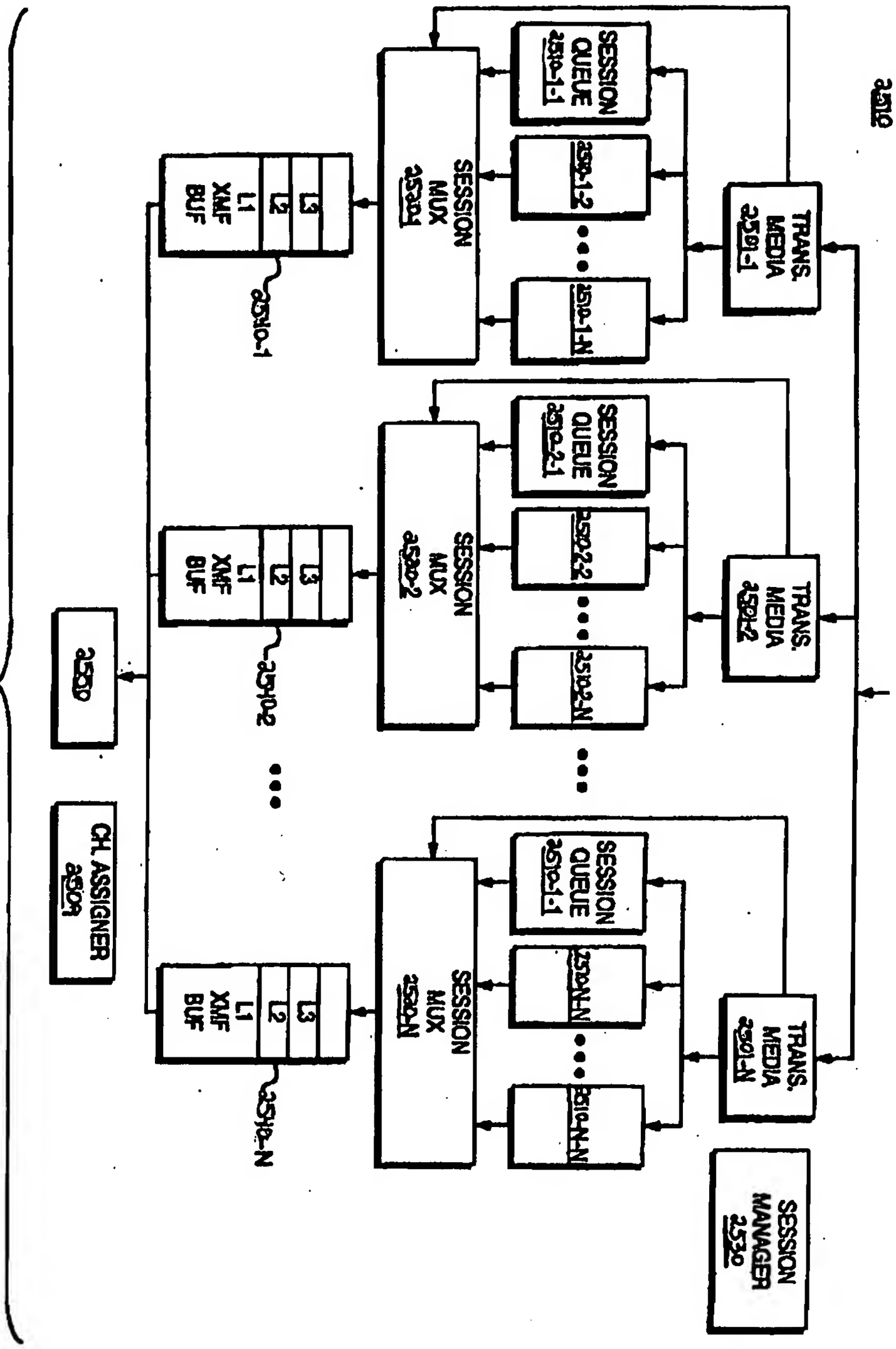


FIG. 25

REPLACEMENT DRAWING

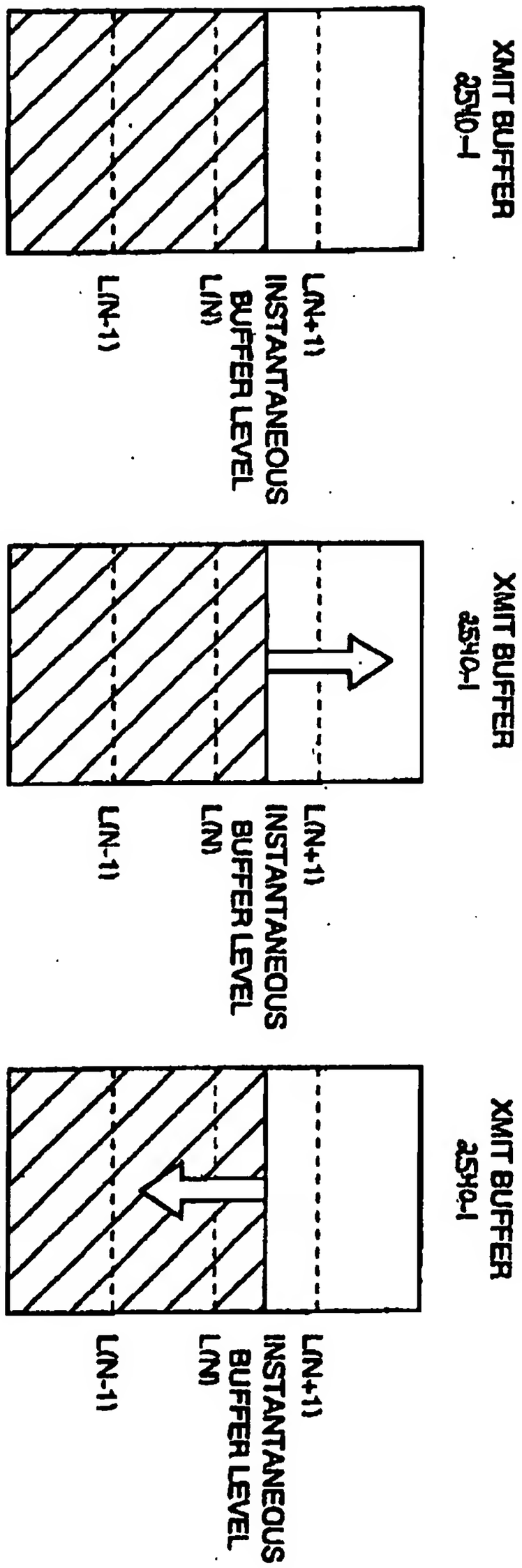


FIG. 26

FIG. 27

FIG. 28